

IN THE CLAIMS

1. (previously amended) A wave reducing hull for a vessel having a bow, midbody and a stern; said hull being characterized in having:

- (a) a generally triangular waterplane having a pointed end adjacent said bow, and a maximum water beam adjacent said stern;
- (b) said waterplane having a generally rectilinear diverging sides extending substantially from said pointed end to said maximum water beam;
- (c) said waterplane having a midbody water beam substantially smaller than said maximum water beam;
- (d) said hull having a draft adjacent said pointed end deeper than the draft adjacent said maximum water beam; and
- (e) said draft adjacent said pointed end being no greater than approximately thirty three percent (33%) of said maximum water beam adjacent said stern..

2. (original) The ship hull of claim 1 wherein said bow portion of said hull is generally free of depending structures.

13. (previously amended) A transonic hull with a displacement body portion below waterplane having in hydrostatic conditions a length, a bow, a midbody portion, a stern, and a generally triangular waterplane with an apex adjacent said bow, a wide waterplane beam adjacent said stern and a waterplane beam adjacent said midbody portion substantially smaller than said wide waterplane beam, said body portion having a first draft adjacent said bow substantially greater than a second draft adjacent said wide waterplane beam; said body portion being further characterized in having three principal longitudinal surface components, two of which form principal right and left side surface elements of said body portion, with the third principle longitudinal surface component forming a principal bottom surface element of said body portion.

1 14. (original) The structure of claim 13 in which said submerged body portion has a
2 longitudinal axis at its waterplane, with athwarship crosssections perpendicular to said longitudinal
3 axis, and with the projection of said crosssections in end view forming a single peripheral envelope
4 of said crosssections with generally flat sides.
5

6 15. (previously amended) A transonic hull with a displacement body portion below
7 waterplane having in hydrostatic condition a length, a bow, a midbody portion, a stern, and a
8 generally triangular waterplane with a longitudinal axis, with a sharp end adjacent said bow, a wide
9 waterplane beam adjacent said stern and a waterplane beam adjacent said midbody portion
10 substantially smaller than said wide waterplane beam, said body portion having a first draft adjacent
11 said bow substantially greater than a second draft adjacent said wide waterplane beam, said body
12 portion being further characterized in that the lateral edges of said waterplane adjacent and meeting
13 at said apex are substantially rectilinear, and in that the angle included between each of said lateral
14 edges and said longitudinal axis is an acute angle of approximately 7°.
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16 16. (original) The structure of claim 15 further characterized in that the flow exit angle in
17 side view established between a rearward undersurface portion adjacent said stern and a line parallel
18 to waterplane intercepting the lower corner of said stern, being no greater than approximately the
19 angle between said lateral edges adjacent said apex.
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21 17. (original) The structure of claim 16 further characterized in that said flow exit angle is
22 approximately 60% of the angle between said lateral edges adjacent said apex.
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24 18. (previously amended) A Transonic Hull having a submerged portion with a bow, a
25 midbody portion, a stern and a length, with power means to move said hull in the water from a first
26 stationary hydrostatic displacement condition to a second subcritical speed displacement regime and
27 to a third faster super critical speed displacement regime, said submerged portion being further
28

1 characterized in having:

2
3 (a) a generally triangular waterplane with a sharp end adjacent said bow, a wide waterplane
4 beam adjacent said stern and a waterplane beam adjacent said midbody portion substantially
5 smaller than said wide waterplane beam,

6
7 (b) a profile with a deeper draft adjacent said bow, the submerged part of said bow being
8 generally free of depending structures, and a smaller draft adjacent said wide waterplane
9 beam,

10
11 (c) and with the draft of said stern varying from approximately 4% of said base relative to
12 a static waterplane in said hydrostatic condition, to substantially zero relative to the water
13 surface adjacent and downstream of said stern when in said subcritical and super critical
14 regimes.

15
16 19. (currently amended) A Transonic Hull having a submerged portion with a bow, a
17 stern, and a length, with power means to move said hull in the water from a first stationary
18 hydrostatic displacement condition to a second subcritical speed displacement regime and to a third
19 faster and at least super critical speed displacement regime, said submerged portion being further
20 characterized in having:

21
22 (a) a generally triangular waterplane with sharp end ~~apex~~ adjacent said bow and a wide waterplane
23 beam ~~base~~ adjacent said stern, a waterplane length, and with generally straight right and left
24 waterplane sides extending from said sharp end to outboard portions of said wide waterplane
25 beam, said sides being generally free of inflections, said waterplane having a center of area
26 at substantially one third of said waterplane length forward of said waterplane stern,

(b) a profile ~~with~~ which in hydrostatic conditions has a deeper draft adjacent said bow and no bulb, and a smaller draft adjacent said wide waterplane beam ~~stern~~, thereby establishing a center of buoyancy upstream of said center of area by substantially 5% of said waterplane length.

(c) with the center of gravity of a boat incorporating said ~~submerged portion~~ transonic hull located at a distance forward from said waterplane stern at least as great as ~~forward~~ approximately 38% of said length of said ~~submerged portion~~: waterplane.

20. (currently amended) A Transonic Hull having a submerged portion with a bow, a stern and a length, with power means to move said hull in the water from a first stationary hydrostatic displacement condition to a second subcritical speed displacement regime and to a third faster ~~super critical speed displacement~~ regime, said submerged portion being further characterized in having:

(a) a generally triangular waterplane, with apex adjacent said bow and a waterplane beam base adjacent said stern, a waterplane length, and ~~with~~ generally rectilinear waterplane sides, and with the ratio of said length to the beam of said waterplane beam base no less than approximately four (4), said waterplane having a center of area at substantially one third of said waterplane length forward of said waterplane beam;

(b) a profile ~~with~~ which in hydrostatic conditions has a deeper draft adjacent said bow ~~and no bulb~~, and a smaller draft adjacent said waterplane beam thereby establishing a center of buoyancy upstream of said center of area at least substantially 5% of said waterplane length, with said smaller draft being no less than approximately 1.5% of said waterplane beam ~~stern~~,

(c) with said transonic hull ~~waterplane having a centroid of area, and the boat incorporating said submerged portion~~ having a center of gravity, located at a distance forward of said

1 ~~waterplane beam with the distance of said center of gravity forward of said center of area~~
2 ~~being~~ no less than approximately 38% of said length of said waterplane,

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4 (d) said transonic hull being further characterized in that the local draft at the stern of said hull in
5 hydrodynamic conditions at speed/length ratio greater than 1.35, being substantially zero.

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7 21. (previously amended) A wave reducing hull for a vessel comprising:

8
9 a generally triangular hull having a pointed narrow bow portion, a midbody portion, and a stern
10 portion having a beam wider than the width of said midbody portion;

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12 said hull having generally rectilinear diverging sides extending substantially from said bow to said
13 stern;

14
15 said hull further characterized in having (a) a generally triangular waterplane in static conditions
16 with a narrow end forward, a rear water beam adjacent said stern portion, and a longitudinal
17 waterline length there between; (b) a center of gravity location no less than approximately
18 38.5% of said longitudinal waterline length measured forward of said rear water beam; (c)
19 power means to propel said vessel to a speed to length ratio no less than approximately 1.25
20 with said speed expressed in knots and said length defined as the square root of said
21 longitudinal water length expressed in feet;

22
23 said hull having in said static condition a draft adjacent said bow deeper than the static draft adjacent
24 the rear water beam; and

25
26 said draft adjacent said rear water beam being between approximately one percent (1%) and
27 approximately four and one-half percent (4.5%) of said beam.